MORYASHCHEV, A.K.; VORONIN, V.G.

Determination of the composition of certain ethereal oils by a method of gas-liquid chromatography. Zhur. anal. khim. 18 no.3:401-405 Mr '63. (MIRA 17

1. Filial Vsesoyuznogo nauchno-issledovatel'skogo instituta sinteticheskikh i natural'nykh dushistykh veshchestv, Kaluga.

VASIL'YEV, Yevgeniy Nikolayevich; MORYASHEVA, F.I., red.;
SHCHEDRINA, N.L., tekhn. red.

[Capital investments financed from noncentralized funds]
Kapital'nye vlozheniia za schet netsentralizirovannykh
istochnikov. Moskva, Gosiurizdat, 1963. 50 p.
(MIRA 16:12)

(Capital investments)

CHELK', Ivan [illegible]

[illegible] zemete [illegible]
[illegible] Izhen zna [illegible]
[illegible]kva, Izd-v [illegible]

MORYCOWA, E.

A coral fauna from the Polish Western Carpathians. Bul Acl Pol chim 7 no.7:505-508 '59. (EEAI 10:4)

1. Laboratory of Geology, Jagellonian University, Cracow. Presented by M.Ksiazkiewicz.
(Poland--Corals) (Carpathian Mountains)

MOR[illegible], [illegible]

[illegible]
[illegible], Polliar [illegible]
'64.

1. Department [illegible] University, [illegible]

[illegible]

[illegible] [illegible]. Moskva, [illegible], 1951.

[illegible]
([illegible] na [illegible])

MORYGANOV, A. N. - BERDYSHEV, A. P.

MORYGANOV, A. N. - BERDYSHEV, A. P.

BERDYSHEV, A. P.

Book on the work practice of a leading collective farm ("Vpered" Collective Farm."). Kolkh. proiz. reviewed by Potapov, K. I. no. 5, 1952

Monthly List of Russian Accessions, Library of Congress, November 1952 UNCLASSIFIED.

BEREZIN, S., KORIGANOV, A.

BEREZIN, S., KORIGANOV, A.

Feeding and Feeding Stuffs

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Farm. Kolkh. proiz. 12 no. 5, 1952.

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[illegible], A.P., [illegible], A. ., [illegible]

COLLECTIVE FARMS - YAROSLAVL PROVINCE;

Book on the [illegible] collective farm "[illegible] Farm",

[illegible], [illegible], [illegible], [illegible], [illegible]

9. Monthly List of Russian Accessions, Library of Congress, [illegible] 1953, Uncl.

MORYGANOW, A.

"The electrical heating of hothouses." p.28
"Michurin breeders in France." p.29
(Plon, Vol 4 No 1 Jan 53 Warszawa)

SO: Monthly List of East European Accessions, Vol 2 No 9 Library of Congress Sept 53 Uncl

PRUDNIKOV, G.; GORSHKOV, A., Geroy Sotsialisticheskogo Truda;
MALININA, P., Geroy Sotsialisticheskogo Truda; SEMENOV, I.,
Geroy Sotsialisticheskogo Truda; KHALYAVIN, S.; BELOUSOV, D.;
MORYGANOV, A.N., kand. sel'khoz. nauk; ULIN, I.I., red.;
LEVINA, L.G., tekhn. red.

[Know how to use every hectare of land] Umelo ispol'zovat' kazhdyi gektar zemli. Moskva, Izd-vo MSKh RSFSR, 1962. 52 p. (MIRA 15:9)

1. Predsedatel' kolkhoza "Pervoye maya" Kaluzhskoy oblasti (for Prudnikov). 2. Predsedatel' kolkhoza "Bol'shevik" Vladimirskoy oblasti (for Gorshkov). 3. Predsedatel' kolkhoza "12-y Oktyabr'" Kostromskoy oblasti (for Malinina). 4. Predsedatel' kolkhoza "Novaya zhizn'" Tul'skoy oblasti (for Semenov). 5. Predsedatel' kolkhoza "Kommunar" Bryanskoy oblasti (for Khalyavin). 6. Sekretar' partiynogo komiteta kolkhoza "Put' Lenina" Bryanskoy oblasti (for Belousov). 7. Zaveduyushchiy otdelom Moskovskogo instituta sel'skogo khozyaystva (for Moryganov).

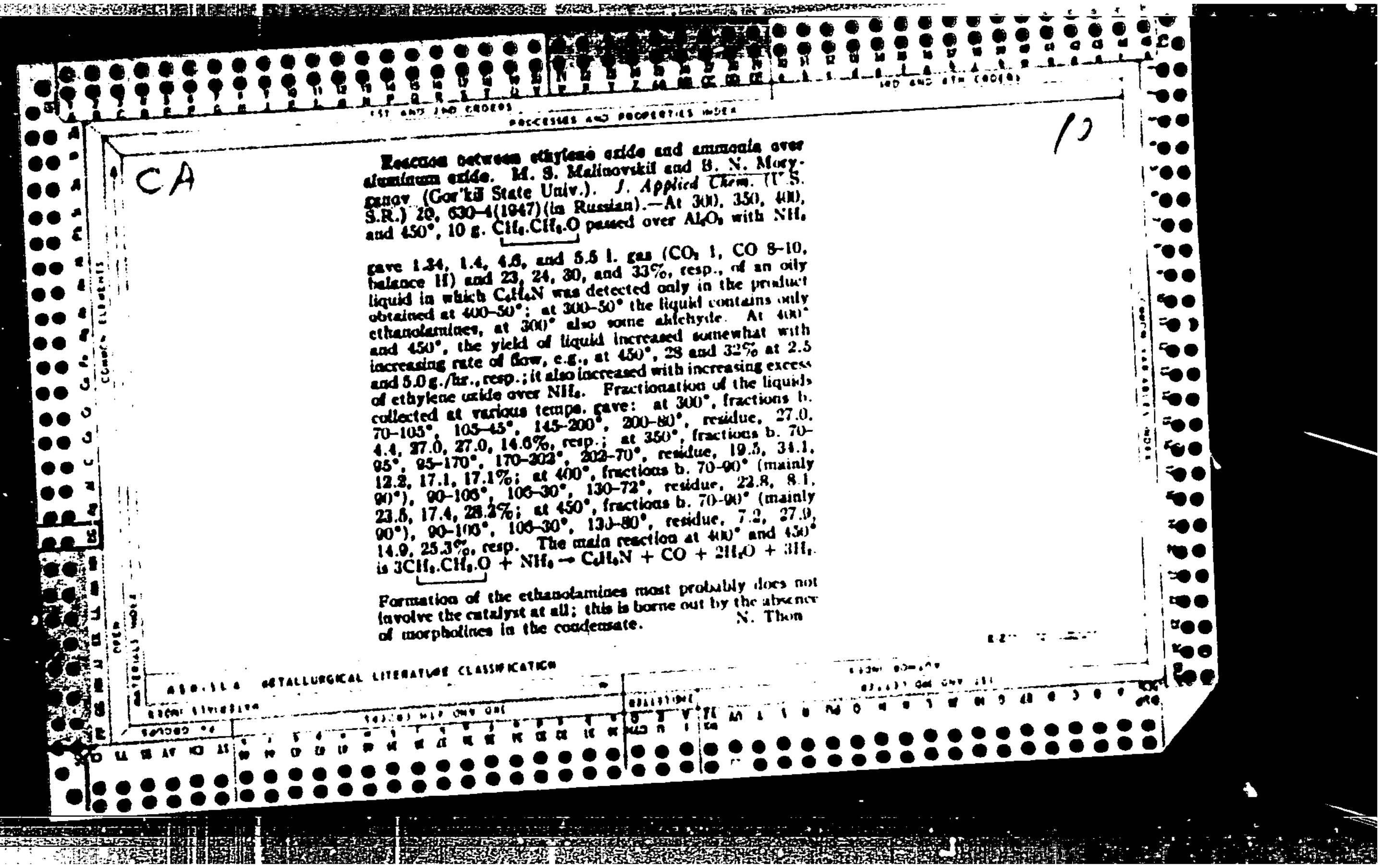
(Agriculture)

ZHUKOVA, T.; SARANIN, K.; BELYAYEV, I.; TYMCHINKO, L.; BIRYUKOVA, V.; KHOKHLOV, F.; YERMOLAYEV, P.; MORYGANOV, A.; BUTIKOV, Yevg.; CHIRKOV, Yu., starshiy nauchnyy sotr.; POLYAKOVA, V., red.; USTINOVA, S., tekhn. red.

[Corn] Kukuruza. Moskva, Mosk. rabochii, 1962. 99 p. (MIRA 15:12)

1. Nauchnyye sotrudniki Nauchno-issledovatel'skogo instituta sel'skogo khozyaystva tsentral'nykh rayonov nechernozemnoy zony (for all except Chirkov, Polyakova Ustinova). 2. TSentral'nyy institut prognozov (for Chirkov).

(Corn (Maize))


PROCESSES AND PROPERTIES INDEX
METALLURGICAL LITERATURE CLASSIFICATION

CA

10

Reaction between ethylene oxide and ammonia over aluminum oxide. M. S. Malinovskii and B. N. Moryganov (Gor'kii State Univ.). *J. Applied Chem.* (U.S.S.R.) 20, 630-4(1947)(in Russian).—At 300, 350, 400, and 450°, 10 g. $\underbrace{CH_2.CH_2.O}$ passed over Al_2O_3 with NH_3 gave 1.34, 1.4, 4.6, and 5.5 l. gas (CO_2 1, CO 8-10, balance H) and 23, 24, 30, and 33%, resp., of an oily liquid in which C_5H_5N was detected only in the product obtained at 400-50°; at 300-50° the liquid contains only ethanolamines, at 300° also some aldehyde. At 400 and 450°, the yield of liquid increased somewhat with increasing rate of flow, e.g., at 450°, 28 and 32% at 2.5 and 5.0 g./hr., resp.; it also increased with increasing excess of ethylene oxide over NH_3. Fractionation of the liquids collected at various temps. gave: at 300°, fractions b. 70-105°, 105-45°, 145-200°, 200-80°, residue, 27.0, 4.4, 27.0, 27.0, 14.6%, resp.; at 350°, fractions b. 70-95°, 95-170°, 170-202°, 202-70°, residue, 19.5, 34.1, 12.2, 17.1, 17.1%; at 400°, fractions b. 70-90° (mainly 90°), 90-106°, 106-30°, 130-72°, residue, 22.8, 8.1, 23.5, 17.4, 28.2%; at 450°, fractions b. 70-90° (mainly 90°), 90-106°, 106-30°, 130-80°, residue, 7.2, 27.9, 14.9, 25.3%, resp. The main reaction at 400° and 450° is $3\underbrace{CH_2.CH_2.O} + NH_3 \rightarrow C_5H_5N + CO + 2H_2O + 3H_2$. Formation of the ethanolamines most probably does not involve the catalyst at all; this is borne out by the absence of morpholines in the condensate. N. Thon

ORYGANOV, B. N.

alinovskii, M. S. and Moryganov, B. N. On the reaction of ethylene oxide with hydrogen ulfide over aluminum oxide. P. 795

O: Journal of Applied Chemistry (USSR) 21, No. 10 (1948):

Ethylene oxide and hydrogen sulfide when passed through a glass tube filled with luminum oxide which has been heated to 300-450° forms an oily liquid containing thiophene from 16.1 to 24.3%. Besides thiophene its homologs are obtained, proved by the positive indophenine reaction.

Lab. of Organic Chemistry of the
Gorki State University.
November 20, 1947

[illegible], B. N.

(4) 7

Thermal decomposition of benzoyl peroxide in a mixture of carbon tetrachloride and methyl alcohol. G. A. Razuvaev, B. N. Moryganov, and V. A. Stepushkina (State Univ., Gorkiy). *Zhur. Obshchei Khim.* 23, 1376-9(1953); cf. *Doklady Akad. Nauk S.S.S.R.*, 80, 69(1951).—Bz_2O_2 with MeOH, refluxed, 20 hrs. gave 1.72 moles BzOH, 0.4 mole CO_2, 0.01 mole C_6H_6, and 0.004 mole CH_2O. Similar decompn. in a sealed tube gave in 20 hrs. at 120-50°, 1.07 moles BzOH, 0.70 mole BzOMe, 0.01 mole C_6H_6, and 0.01 mole CH_2O; refluxed 40 hrs., in an equimolar mixt. of CCl_4 and MeOH it gave 0.83 mole CO_2, 0.31 mole CH_2O, 0.24 mole $CH_2(OMe)_2$, 0.09 mole $CHCl_3$, some C_2Cl_6, 0.1 mole BzOMe, some BzOH (about 0.9 mole), and 0.03 mole phthalic acid. Thus both components react with Bz_2O_2 in addn. to the reaction of CCl_4 and MeOH initiated by the peroxide.

G. M. Kosolapoff

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BA

Problem of formation of pyridine from ethylene oxide. M. S. Malinovski and R. N. Morygunov (*J. appl. Chem., USSR*, 1950, **23**, 653—663).—The following reactions were studied at 300°, 350°, 400°, and 450° using Al_2O_3 as catalyst: condensation of (*a*) MeCHO with NH_3, (*b*) condensation of $(CH_2)_2O$ with NH_3, (*c*) condensation of $NH_2\cdot[CH_2]_2\cdot OH$, and (*d*) isomerisation of $(CH_2)_2O$ to MeCHO. Both liquid (two layers) and gaseous products were investigated. In (*a*) the aq. layer contains MeCHO, whilst the tar-like layer consists of α-picoline, β-picoline, formylcollidine, and β-collidine. In the gaseous phase the content of H_2 increases markedly while the N_2, CH_4, O_2, and CO contents decrease. This indicates the formation of heterocyclic compounds. In (*b*) the content of H_2 in the gaseous phase sharply increases (10·6% (average at 300°) to 50·6% (average at 400°). With rise in temp., CO content increases while O_2, N_2, and CH_4 decrease simultaneously. C_5H_5N is formed only at 400° and 450°. The liquid products have been described previously (*J. appl. Chem., USSR*, 1948, **21**, 986). In (*c*) the aq. layer contains MeCHO, NH_3, and 16—21% of amines when the tar-like layer contains no C_5H_5N. In the gaseous phase, the amount of unsaturated hydrocarbons, CO, and H_2 increases simultaneously with decrease of O_2 and CH_4. In (*d*), the H_2 content of the gas phase increases slightly with temp., that of CO decreases slightly, whilst the % of the remaining gases is about the same. Therefore (*a*) and (*b*) seem not to be identical processes and there is no doubt that the formation of C_5H_5N bases during the condensation of $(CH_2)_2O$ with NH_3 does not go through the formation of $NH_2\cdot[CH_2]_2\cdot OH$.

J. B. J. Zaba.

MORYGANOV, B. N.

(4) 9

Thermal decomposition of benzoyl peroxide in a mixture of solvents: benzene and nitrobenzene, and nitrobenzene and carbon tetrachloride. G. A. Razuvaev, B. N. Moryganov, and V. A. Stepushkina (State Univ., Gorki). *Zhur. Obshchei Khim.* 23, 1379-81(1953).—In the thermal decompn. of Bz_2O_2, the Ph radicals react with both C_6H_6 and $PhNO_2$, the former being the preferred reaction. In this system after refluxing on a steam bath there are formed 1.48 moles CO_2, 0.07 mole mixed nitrobiphenyls (*p*-isomer isolated), an appreciable amt. of BzOH, some Ph_2 (about 0.09 mole), an appreciable amt. of tar. In $PhNO_2$-CCl_4, the preferred reaction is with the CCl_4, yielding C_2Cl_6, 0.31 mole PhCl, 0.06 mole nitrobiphenyls, 0.84 mole BzOH, 0.07 mole phthalic acid, and 0.88 mole CO_2. G. M. Kosolapoff

NA

MORYGANOV, B. N.

"Thermal Decomposition of Benzoyl Peroxide in a Mixture of Solvents"
Uch. Zap. Gor'kovsk. Un-ta, No 24, pp 171-174, 1953

An equimolecular mixture of benzoyl peroxide, benzene, and nitrobenzene was heated in a steam bath for 73-88 hours. CO_2, benzoic acid, diphenyl, and a mixture of nitrodipheny ls including 4- nitrodiphenyl were detected in the decomposition products. The authors feel that under these conditions, benzoyl peroxide reacts with both benzene and nitrobenzene in a mechanism involving radicals. (RZhKhim, No 20, 1954)

SO: Sum, No 606, 5 Aug 55

MERYGANOV, N.

USSR .

Synthesis and investigation of some alkylarylethanes as initiators of polymerization. B. N. Meryganov and A. A. Emel'yanov. *Uchenye Zapiski Gor'kov. Univ.* 1953, No. 24, 170-82; *Referat. Zhur., Khim.* 1954, No. 20076.—2,3-Dimethyl-2,3-diphenylbutane (I) was obtained by adding a soln. of 8 g. of acetyl peroxide (II) in 30 g. of cumene (III) to 16 g. of III over a period of 3 hrs. at 125°. The yield was 62%. Nitration of I with HNO_3 in Ac_2O at 0° gave dimethyldinitrodiphenylbutane (IV), m. 250-2°, yield 78%. By similar method, 2,2,3,3-tetraphenylbutane could not be synthesized from II and 1,1-diphenylethane. I and IV did not induce polymerization of $CH_2:C(Me)CO_2Me$.

M. H.

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USSR.

✓Reactions of acyl peroxides with metals and chlorides of metals (tin and antimony). G. A. Razuvaev, B. N. Moryganov, E. P. Dlin, and Yu. A. Ol'dekop ~~(State Univ., [illegible])~~. *Zhur. Obshchei Khim.* 24, 282-6(1954).—Refluxing 18.9 g. $SnCl_2$ and 24.2 g. Bz_2O_2 in C_6H_6 20 hrs. gave 2% CO_2, and distn. of the solvent left behind 43 g. dark residue which on extn. with hot C_6H_6 gave 43.1% $(BzO)_2SnCl_2$, while the distillate yielded 0.54 g. $SnCl_4$. $(BzO)_2SnCl_2$ does not m. up to 330°; it is cleaved by HCl, yielding BzOH; the action of NaOH and steam is similar. Shaking 0.3 g. $SnCl_2$ and 8 g. Bz_2O_2 in C_6H_6 12 hrs. gave some $SnCl_4$ (about 0.28 g.) and a residue of 33.7% $(BzO)_2SnCl_2$. Similar reaction in $(CH_2Cl)_2$ or Ac_2O at room temp. gave in 2 hrs. 5.1 and 4.7 g., resp., $(BzO)_2SnCl_2$ (crude), but no $SnCl_4$ was observed. Heating an equimolar mixt. of $SbCl_3$ and Bz_2O_2 in C_6H_6 led to complete conversion of the Sb to Sb^5 state, without evolution of CO_2; treatment of the product with HCl gave 100% BzOH. To a refluxing suspension of 10 g. powd. Sn in C_6H_6 was added over 4 hrs. 20 g. Bz_2O_2 and the mixt. refluxed 13 hrs.; only traces of CO_2 were evolved and the org. layer yielded with aq. NaOH 1 g. BzOH, while the insol. ppt. (14.3 g.) was identified as $(BzO)_2Sn(OH)_2$ [from $(CH_2Cl)_2$], which is not affected by HCl or NaOH; it does not m. up to 330°, but splits off BzOH slowly even at lower temps.; with steam it yields BzOH, also formed on treatment with NaOH, followed by steam. Heated in a sealed tube with HCl to 130-40°, the product also loses BzOH. No reaction occurred between Sn and Bz_2O_2 at room temp. in C_6H_6 in 150 hrs. Heating a mixt. of Sn (excess) with Bz_2O_2 on a sand bath led to a violent reaction with evolution of CO_2, yielding Ph_2 and apparently some $(BzO)_2Sn(OH)_2$. Refluxing 10 g. Sb with 8.7 g. Ac_2O_2 in C_6H_6 8 hrs. gave 0.08 g. CO_2 and $Sb(OAc)_3$, which is rapidly hydrolyzed by atm. moisture to Sb_2O_3 and AcOH; the yield was estd. at 12.1 g.; some 4.8 g. unreacted Sb was left. G. M. Kosolapoff

Moryganov, B. N.

5

Triggering the reaction between carbon tetrachloride and isopropyl alcohol with benzoyl peroxide. [illegible] and B. N. Moryganov [illegible]

[illegible] 1954 [illegible]

[illegible]

MOKYGANOV, B. A.

Chain reactions of carbon tetrachloride with alcohols. G. A. Razuvaev, B. N. Moryganov, and A. S. Volkova (State Univ., Gorky). Zhur. Obshchei Khim. 25, 495-9 (1955); J. Gen. Chem. U.S.S.R. 25, 483-5(1955)(Engl. translation).—Reaction of Bz_2O_2 with equimolar mixts. of CCl_4 and iso-PrOH run at reflux for up to 80 hrs. (results shown graphically in respect to CO_2 and HCl evolution) indicates that Bz_2O_2 initiates a chain reaction between the 2 solvents; a similar reaction occurs with MeOH instead of iso-PrOH. The reaction chain length is greater with iso-PrOH. It is suggested that the BzO and Ph radicals initiate the chain by forming BzOH and C_6H_6, resp., with concurrent formation of Me_2COH radicals, which react with CCl_4 conventionally, yielding $Me_2C(OH)Cl$ and the chain-continuing CCl_3 radicals. G. M. Kosolapoff

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MORYGANOV, B.N.

USSR/Chemistry - Reaction processes

Card 1/1 Pub. 151 - 15/38

Authors : Razuvayev, G. A.; Moryganov, B. N.; Dlin, E. P.; and Ol'dekop, Yu. A.

Title : Reaction of acyl peroxides with metals and metal chlorides (Sn and Sb).

Periodical : Zhur. ob. khim. 24/2, 262-265, Feb 1954

Abstract : The reaction between benzoyl peroxide and $SnCl_2$, $SbCl_3$, metallic Sn as well as the reaction between acetyl peroxide and Sb were investigated. The reactions were carried out in benzene, dichloroethane and acetic anhydride solutions. The products derived from these reactions are listed. Four references: 3-USSR and 1-USA (1927-1953).

Institution : State University, Gorkiy

Submitted : June 19, 1953

USSR

6847* Thermal Decomposition of Benzoyl Peroxide in a Mixture of Solvents—Benzene and Methyl Alcohol, Carbon Tetrachloride and Isopropyl Alcohol. Termicheskoe razlozhenie perekisi benzoila v smesi rastvoritelei—benzol i metilovyi spirt, chetyrekhkhloristyi uglerod i izopropilovyi spirt. (Russian.) B. N. Moryganov. *Zhurnal Obshchei Khimii*, v. 25, no. 3, Mar. ~~1955, p. 493-495.~~
3 ref.

Gor'kiy State U.

RAZUVAYEV, G.A.; MORYGANOV, B.N.; VOLKOVA, A.S.

Chain reactions or carbon tetrachloride with alcohols.
Zhur.ob.khim. 25 no.3:495-499 Mr '55 (MLRA 8:6)

1. Gor'kovskiy Gosudarstvennyy universitet.
(Carbon tetrachloride)(Alcohols)

Chain reaction of carbon tetrachloride with isopropyl alcohol initiated by acetylated and benzoylated hydroperoxides of 1,1-dihydroxycyclohexane. G. A. Kolnovskaya, B. N. Moryganov, G. A. Razuvaev, and V. A. Shushunov (State Univ., Gorki). *Zhur. Obshchei Khim.* 26, 1981-6(1956); cf. *C.A.* 50, 3303h.—The chain reaction of CCl_4 with iso-PrOH is initiated readily by 1,1-dihydroperoxycyclohexane diacetate or dibenzoate; the kinetic curves of the reaction, as followed by concn. of HCl, are shown. The chain length is greater when initiated by the Bz deriv. than by the Ac deriv. The rate of accumulation of HCl rises rapidly with elevation of temp., with the activation energy of the process being 25.8 kcal./mole. The reaction commences at 40-50° and is quite rapid at 80°.

G. M. Kosolapoff

MORYGANOV, B.N.

Reaction between hexachloroethane and isopropyl alcohol initiated by benzoyl peroxide. G. A. Razuvaev, B. N. Moryganov, and A. G. Kronman (State Univ., Gorki). *Zhur. Obshchei Khim.* 26, 2224-8(1956); cf. C.A. 50 3303h.—Reaction of C_2Cl_6 with iso-PrOH initiated by Bz_2O_2 was studied at reflux temp. The products are CO_2, HCl, Me_2CO, C_6H_6, BzOH, o-$C_6H_4(CO_2H)_2$, $(CCl_3)_2$, and possibly HC_2Cl_5. The kinetic curves, which are shown, give evidence of chain reaction, probably involving the radical formation of Me_2COH with an odd electron on the central C atom. Probable mechanism of product formation is outlined, with the formation of an intermediate complex between the above radical at the H atom of the HO group, and a Cl atom of C_2Cl_6, the complex cleaving to Me_2CO, HCl, and $CCl_2CCl_3\cdot$ radical. G. M. Kosolapoff

RAZUVAYEV, G.A.; MORYGANOV, B.N.

Thermal decomposition of benzoyl peroxide in a mixture of solvents.
Soob.o nauch.rab.chl.VKHO no.4:52-53 '53. (MIRA 10:10)
(Benzoyl peroxide) (Thermochemistry)

MORYGANOV, B.N.

USSR/Organic Chemistry. Theoretical and General Questions of Organic Chemistry. E-1

Abs Jour : Ref Zhur - Khimiya, No. 8, 1957, 26660.

Author : Kolpovskaya, G.A.; Moryganov, B.N., Razuvayev, G.A.; Shushunov, V.A.

Inst :

Title : Chain Reaction of Carbon Tetrachloride with Isopropyl Alcohol Initiated by Acetylized and Benzoylated 1-Oxychclohexanone Hydroperoxides.

Orig Pub : Zh. obshch. khimii, 1956, 26, No. 7, 1981 - 1986.

Abstract : Acetylized (I) and benzoylated 1-oxycyclohexane hydroperoxide (II) starts a reaction between CCl_4 and isopropanol at 40 to 50°. The basic resulting products are HCl, $CHCl_3$ and acetone (III). The influence of the concentration of I and II on the initiation

Card 1/2

USSR/Organic Chemistry. Theoretical and General Questions of Organic Chemistry. E-1

Abs Jour : Ref Zhur - Khimiya, No. 8, 1957, 26660.

of the reaction at 80° was investigated by the study of the liberation of HCl, CO_2 and III. The chain mechanism of the reaction analogous to the reaction with benzoyl peroxide (RZhKhim, 1956, 9361) is proved. At concentrations of I less than 0.01 g.mol per lit, the length of the chain increases sharply with the decrease of the concentration, depends little on I in more concentrated solutions. The chain lengths computed by HCl are less for I than for II, and computed by III - are greater for I than for II. The curve of the dependence of the liberation speed of HCl on the concentration of I at 55° is shown. The energy of the process activation is 25.8 - 0.5 kcal/mol.

Card 2/2

MORYGANOV, B.N.

USSR/Organic Chemistry. Theoretical and General Questions of Organic Chemistry. E-1

Abs Jour : Ref Zhur - Khimiya, No. 8, 1957, 26661.

Author : Razuvayev, G.A.; Moryganov, B.N., Kronman, A.G.

Inst :

Title : Reaction Between Hexachloroethane and Isopropyl Alcohol Initiated by Benzoyl Peroxide.

Orig Pub : Zh. obshch. khimii, 1956, 26, No. 8, 2224 - 2228.

Abstract : When hexachloroethane (I) is boiled with isopropanol (II) in presence of benzoyl peroxide (III), the reaction proceeds according to the radical chain mechanism: initiation: $III \rightarrow 2C_6H_5COO^\circ \rightarrow C_6H_5^\circ + CO_2$; beginning of the chain: $C_6H_5COO^\circ + II \rightarrow C_6H_5COOH +$

Card 1/

USSR/Organic Chemistry. Theoretical and General Questions of Organic Chemistry. E-1

Abs Jour : Ref Zhur - Khimiya, No. 8, 1957, 26661.

$CH_3C^{\bullet}(OH)CH_3$ (A); $C_6H_5^{\bullet} + II \rightarrow C_6H_6 + A$; chain: $A + I \longrightarrow (CH_3)_2\dot{C} - O \cdots H - Cl - CCl_2CCl_3 \longrightarrow CH_3COCH_3 + HCl + CCl_3CCl_2^{\bullet}$; chain transmission: $CCl_3CCl_2^{\bullet} \rightarrow CCl_2 = CCl_2 + Cl^{\bullet}$ $CCl_3CCl_2^{\bullet} + II \rightarrow A + CCl_3CCl_2H$; $Cl^{\bullet} + II \rightarrow A + HCl$; break of chain: $2A \rightarrow CH_3COCH_3 + II$. CO_2, HCl, acetone, benzene, phthalic and benzoic acids and pentachloroethane were found among the reaction products. The circumstance indicating the chain mechanism of the reaction is that if it is carried out with 1 mol of II and 0.125 mol of I in presence of 0.0124 mol of III, 24.1 mols of HCl and 16.7 mols of CH_3COCH_3 will be received per mol of III, while 0.0021 mol of III will produce 73.3 mols of HCl and 37 mols of acetone under the same conditions. The length ν of the

Card 2/3

Reaction kinetics of isopropyl alcohol with carbon tetrachloride [illegible]

[illegible]

SOV/81-59-13-48338

ranslation from: Referativnyy zhurnal Khimiya, 1959, Nr 13, p 575 (USSR)

UTHORS: Moryganov, B.N., Yefimov, L.I., Lyubimova, V.V

ITLE: The Effect of Esters of α-Oxyacids on the Polymerization Rate of Methyl and Butyl Ethers of Methacrylic Acid

ERIODICAL: Tr. po khimii i khim. tekhnol., 1958, Nr 2, pp 368 - 372

BSTRACT: The kinetics of the decomposition of benzoyl peroxide in butyl ethers of the α-oxyisobutyric and lactic acids has been studied at 79, 99 and 116°C. A weak inhibiting effect of the mentioned esters on the rate of polymerization of the ethyl and butyl ethers of methacrylic acid has been shown by the dilatometric method (designs of dilatometers are cited).

M. Leonov

Card 1/1

39120

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S/190/61/003/012/004/011
B101/B110

AUTHORS: Lapshin, N M , Moryganov, B. N , Razuvayev G A
Ryabov, A V , Khidekel , M L.

TITLE: Nitrogenous peroxide compounds as initiators of polymerization of vinyl monomers I

PERIODICAL: Vysokomolekulyarnyye soyedineniya v 3 no 12 1961
1794 - 1799

TEXT: On the basis of literature data stating that the initiating activity of peroxide compounds is intensified by addition of amines, the authors investigated the initiating effect of peroxides which already contain amine or amide groups in their molecules Initiators were synthesized as follows: Cumyl-N-phenyl peroxy carbamate and hexamethylene N,N bis (cumyl-peroxy carbamate according to Refs. 6, 7 (see below), the other peroxide compounds according to A. Rieche et al. (Chem Ber , 92, 226 1959). N,N',bis (cumyl peroxy methyl) urea was first synthesized by the authors: urea was shaken in 2 N H_2SO_4 with cumyl peroxide and formalin After 12 hr storing in the refrigerator the peroxide crystallized out

Card 1/5

30910
S/190/61/003/012/004/012
B101/B110

Nitrogenous peroxide

(melting point 120 - 121°C, yield 42%). The initial rate of polymerization of monomers cleaned in vacuum by distillation: methyl methacrylate (MMA); methacrylic acid (MA); acrylonitrile (AN); styrene (St) was measured dilatometrically. Results are given in a table. Polymerization was achieved in bulk. A distinct dependence of the initiating effect on the structures of peroxides was found. Peroxides with group >N-CO [illegible] were more active than peroxides with group $>N-CH_2-O-O$. Furthermore, the nature of the monomer especially the chemical nature of the groups between the nitrogen atom and the peroxide group influences the initiating [illegible] of peroxides. The optimum temperature for polymerization also [illegible] on structure of monomer and peroxide. Peroxides with group >N-CH[illegible] were most effective at elevated temperatures (St, ≥ [illegible]) while the optimum temperature for cumyl N phenyl peroxy carbamate (for MMA, MA and AN) was [illegible]0 - 60°C. The insignificant activity of this compound in polymerization of styrene (120°C) is ascribed to its low temperature stability. The initial rate of polymerization depended on temperature according to the Arrhenius equation. The activation energy was [illegible] k[illegible] mole. For the dependence of the initial rate v_{in} on the [illegible]

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B101/B110

Nitrogenous peroxide...

(in the concentration range $0.187 \cdot 10^{-3}$ to $0.44 \cdot 10^{-3}$ molar parts), it was found: $v_{in} = 3.5\sqrt{c_0} + 0.0448$. There are 5 figures, 1 table, and 9 references: 2 Soviet and 7 non-Soviet. The three references to English-language publications read as follows: Ref. 3: M. Imoto, S. Choe, J. Polymer Sci., 15, 485, 1955; Ref. 6: E. L. O'Brien, T. M. Beringer, R. B. Mesrobian, J. Amer. Chem. Soc., 79, 6238, 1957; Ref. 7: C. Y. Pedersen, J. Organ. Chem., 23, 252, 1958.

ASSOCIATION: Nauchno-issledovatel'skiy institut khimii pri Gor'kovskom gosudarstvennom universitete im. N. I. Lobachevskogo (Scientific Research Institute of Chemistry at the Gor'kiy State University imeni N. I. Lobachevskiy)

SUBMITTED: January 5, 1961

Table. Initial rates of polymerization of MMA, MA, AN, and St with initiation by means of nitrogenous peroxides.

Legend: (A) Initiator; (B) formula; (C) concentration c_0 of the initiator,

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Nitrogenous peroxide...

moles/1000 g of monomer; (D) initial rate v_H (= v_{in}) of polymerization, % of conversion/min·10; (a) MMA at 60°C; (b) MA at 60°C; (c) AN at 50°C; (d) St at 120°C; (e) does not initiate; (1) cumyl-N-phenyl peroxy carbamate; (2) N-cumyl peroxy methyl benzamide; (3) bis-benzaminomethyl peroxide; (4) hexamethylene-N,N'-bis-α-cumyl peroxy carbamate; (5) N,N'-bis-(cumyl-peroxy-methyl)-urea; (6) bis-(dicyclohexyl aminomethyl)-peroxide; (7) cumyl peroxy methyl dimethylamine; (8) cumyl peroxy methyl dicyclohexylamine.

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Nitrogenous peroxide...

Table

Ⓐ Инициатор	Ⓑ Формула	Ⓒ Концентрация инициатора, моль/1000 г мономера (с)	Ⓓ Начальная скорость превращения ($r_н$), % превращения /мин·10: ⓐ Метилметакрилат '	ⓑ Метакриловая кислота '	ⓒ Акрилонитрил '	ⓓ Стирол '
1 Кумил-N-фенилпероксикарбамат	$C_6H_5NHCO-O-O-C(CH_3)_2C_6H_5$	0,0073	4,8	≈30	27,5	2,29
2 N-Кумилпероксиметилбензамид	$C_6H_5CONHCH_2-O-O-C(CH_3)_2C_6H_5$	0,0073	не ингибирует	0,598	0,943	4,50
3 бис-Бензамидометилпероксид	$C_6H_5CONHCH_2-O-O-CH_2NHCOC_6H_5$	0,0073	0,418	0,590	0,52	6,54
4 Гексаметилен-N,N'-бис-α-кумилпероксикарбамат	$C_6H_5-C(CH_3)_2O-OC(O)NH(CH_2)_6NH(O)C-O--OC(CH_3)_2C_6H_5$	0,0050	0,548	0,74	2,90	9,55
5 N,N'-бис-(Кумилпероксиметил)мочевина	$C_6H_5C(CH_3)_2O-OCH_2NHCONHCH_2-O--OC(CH_3)_2C_6O_5$	0,0050	0,19	0,60	0,42	3,55
6 бис-(Дициклогексиламинометил)пероксид	$(C_6H_{11})_2NCH_2-O-O-CH_2N(C_6H_{11})_2$	0,0050	0,3	не ингибирует	0,25	1,90
7 Кумилпероксиметилдиметиламин	$(CH_3)_2NCH_2-O-O-C(CH_3)_2C_6H_5$	0,0050	0,15	0,3	0,195	1,25
8 Кумилпероксиметилдициклогексиламин	$(C_6H_{11})_2NCH_2-O-O-C(CH_3)_2C_6H_5$	0,0050	0,83	1,57	0,537	3,08

Card 5/5

MORYGANOV, B.N.; LAPSHIN, N.M.; SALOVA, L.M.; PLISHKINA, T.A.

Decomposition of cumyl-N-phenylperoxycarbamate in organic solvents.
Zhur.ob.khim. 32 no.8:2673-2676 Ag '62. (MIRA 15:9)
(Carbanilic acid)

ACCESSION NR: AP4025006 S/0062/64/000/003/0430/0435

AUTHOR: Razuvayev, G. A.; Dodonov, V. A.; Mory*ganov, B.N.

TITLE: Perbenzoylalkyl(aryl) carbonates. Communication 2. Reaction of perbenzoylcyclohexylcarbonate with certain organic solvents.

SOURCE: AN SSSR. Izv. Seriya khimicheskaya, no. 3, 1964, 430-435

TOPIC TAGS: perbenzoylalkylcarbonate, perbenzoylarylcarbonate, perbenzoylcyclohexylcarbonate solvent complex, decomposition, kinetics, activation energy, thermal reaction, benzoate radical cyclohexyloxy radical, reactivity

ABSTRACT: The kinetics of the decomposition of perbenzoylcyclohexylcarbonate (PCC) in benzene and in n-heptane were studied. The decomposition reaction is a first order reaction. The activation energy (E) of the disintegration of PCC in benzene and n-heptane is 23.5 and 25.8 kcal/mol. The thermal reaction of PCC in benzene, n-heptane and isopropanol was studied; the reaction products were identified and determined quantitatively. Preliminary investigation showed reaction in $CHCl_3$ and CCl_4 was complex with evolution of HCl, hence this was pursued no further. PCC decomposition results in the following radical formation

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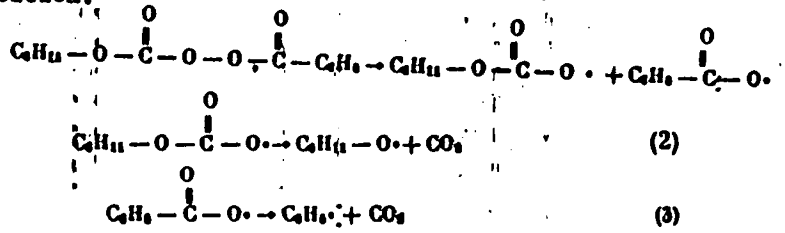
ACCESSION NR: AP4025006

and decomposition:



$$C_6H_{11}-O-\overset{O}{\overset{\|}{C}}-O-O-\overset{O}{\overset{\|}{C}}-C_6H_5 \rightarrow C_6H_{11}-O-\overset{O}{\overset{\|}{C}}-O\cdot + C_6H_5-\overset{O}{\overset{\|}{C}}-O\cdot \quad (1)$$

$$C_6H_{11}-O-\overset{O}{\overset{\|}{C}}-O\cdot \rightarrow C_6H_{11}-O\cdot + CO_2 \quad (2)$$

$$C_6H_5-\overset{O}{\overset{\|}{C}}-O\cdot \rightarrow C_6H_5\cdot + CO_2 \quad (3)$$

$$2C_6H_{11}O\cdot \rightarrow C_6H_{10}O + C_6H_{11}OH \quad (4)$$

$$C_6H_{11}O\cdot + RH \rightarrow C_6H_{11}OH + R\cdot \quad (5)$$

The benzoate and cyclohexyloxy radical react with solvents almost as well as radicals obtained by the decomposition of symmetrical peroxides such as benzoyl peroxide or dicyclohexylperoxydicarbonate (activation energy about 30 kcal/mol). "V. N. Fofanova took part in the experimental work." Orig. art. has: 6 equations, 3 figures and 1 table.

ACCESSION NR: AP4025006

ASSOCIATION: Nauchno-issledovatel'skiy institut khimii pri Gor'kovskom gosudarstvennom universitete im. N. I. Lobachevskogo (Scientific Research Institute of Chemistry at the Gorkiy State University).

SUBMITTED: 08Oct62 DATE ACQ: 17Apr64 ENCL: 00

SUB CODE: GC,OC NO REF SOV: 009 OTHER: 004

Card 3/3

MORYGANOV, B.N.; KALININ, A.I.; MIKHOTOVA, L.N.

Polarographic method of studying the thermal decomposition of acetone diperoxide in organic solvents. Zhur.ob.khim. 32 no.11:3476-3483 N '62. (MIRA 15:11)

1. Gor'kovskiy gosudarstvennyy universitet im. N.I. Lobachevskogo.
(Acetone) (Peroxides) (Polarography)

ACCESSION NR: AP4040486 S/0190/64/006/006/1068/1071

AUTHORS: Razuvayev, G. A.; Lapshin, N. M.; Khidekel', M. L.; Mory*ganov, B. N.; Ryabov, A. V.

TITLE: Nitrogen containing peroxides as polymerization initiators of vinyl monomers. 3

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 6, 1964, 1068-1071

TOPIC TAGS: vinyl monomer, methyl methacrylate polymerization, methacrylic acid polymerization, styrene polymerization, acrylonitrile polymerization, polymerization initiator, nitrogen containing peroxide, phenylperoxycarbamate, phenylperoxycarbamate decomposition kinetics

ABSTRACT: The purpose of the present investigation consisted of determining whether a tertiary butyl radical (located behind the peroxide bridge of the groupings N-COOO and NCH_2OO) would affect the superior performance of the N-COOO group as polymerization initiator. The initiator activities of tert.butyl-N-phenylperoxycarbamate (I), N-tert.butylperoxymethylbenzamide (II), and N,N'-bis-(tert.

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ACCESSION NR: AP4040486

butylperoxymethyl)urea(III) on the polymerization of methylmethacrylate, methacrylic acid, styrene, and acrylonitrile were investigated. The polymerization of methylmethacrylate was conducted in block, in the presence of 0.05 mole% of the initiator per mole of the monomer, at 18-60C for initiator (I) and at 60C for initiators (II) and (III). It was found that peroxide (I) was the most effective (in its presence the activation energy was 19.6 kcal/mole). Similar tests with methacrylic acid, styrene, and acrylonitrile confirmed the superior performance of the initiator containing the N-COOO grouping. Additional experiments were conducted on the kinetics of decomposition of (I) in benzene at 60-80C. The decomposition was found to proceed generally according to a first order reaction. The activation energy was estimated as 30.5 kcal/mole. Orig. art. has: 2 charts.

ASSOCIATION: Nauchno-issledovatel'skiy institut khimii Gor'kovskogo gosudarstvennogo universiteta im. N. I. Lobachevskogo (Scientific Research Institute of Chemistry at Gorkiy State University)

SUBMITTED: 10Jul63 DATE ACQ: 06Jul64 ENCL: 00

SUB CODE: GC NO REF SOV: 001 OTHER: 005

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L 21866-65 EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 RPL WW/RM
ACCESSION NR: AR4049264 S/0081/64/000/016/S027/S027

SOURCE: Ref. zh. Khimiya, Abs. 16S142 B

AUTHOR: Razuvayev, G. A.; Lapshin, N. M.; Khidekel', M. L.; Mory*ganov, B. N.; Ryabov, A. V.

TITLE: Nitrogen containing peroxide compounds as initiators of vinyl monomer polymerization. II. Polymerization of methylmethacrylate initiated by the system aminoperoxide-dimethyl aniline

CITED SOURCE: Sb. Vy* sokomolekul. soyedineniya. Karbotsepn. vy*sokomolekul. soyedineniya. M., AN SSSR, 1963

TOPIC TAGS: bulk polymerization, methylmethacrylate polymerization, vinyl monomer polymerization, nitrogen containing peroxide initiator, aminoperoxide dimethylaniline initiator, polymerization initiator

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ACCESSION NR: AR4049264

TRANSLATION: The study concerns bulk polymerization of methylmethacrylate initiated by the system cumenyl-N-phenylperoxycarbamate (I) - dimethyl aniline (II) - at 40C. It was found that the admixture of II substantially accelerates the polymerization process, peak acceleration occurring at a II:I ratio of 0.5. Data on molecular weight of polymethylmethacrylate coincide well with kinetic results. A solution containing various ratios of I and II in C_6H_6 was treated with 2, 4, 6-tri-tert-butylphenol. After reaction with the radicals, the latter provides 2, 4, 6-tri-tert-butylphenoxyl radicals which are stable under these conditions and can be fixed by means of the EPR technique. The concentration of stable radicals fixable in this manner was highest at a II:I ratio of 0.5. The decomposition of equimolecular mixtures of I and II in a C_6H_6 solution was studied at 40C. Analysis of decomposition products disclosed CO_2, aniline, dimethylaniline, dimethylphenyl carbinol, acetophenone, azobenzene and tarry residues. Admixture of II had negligible effects on polymerization at 60C with four aminoperoxides containing the $>NCH_2OO-$ group. A-symmetrical aminoperoxides are more susceptible to this effect than are their

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ACCESSION NR: AR4049264

symmetrical counterparts. Activity of the initiator is determined by the structure of a peroxide and the stabilization of the $>NCH_2OO-$ group. For Part I, see RZhKhim, 1962, 10R38. Authors' abstract

SUB CODE: OC, MT ENCL: 00

RAZUVAYEV, G.A.; [illegible]; [illegible]; [illegible]; [illegible]; [illegible]

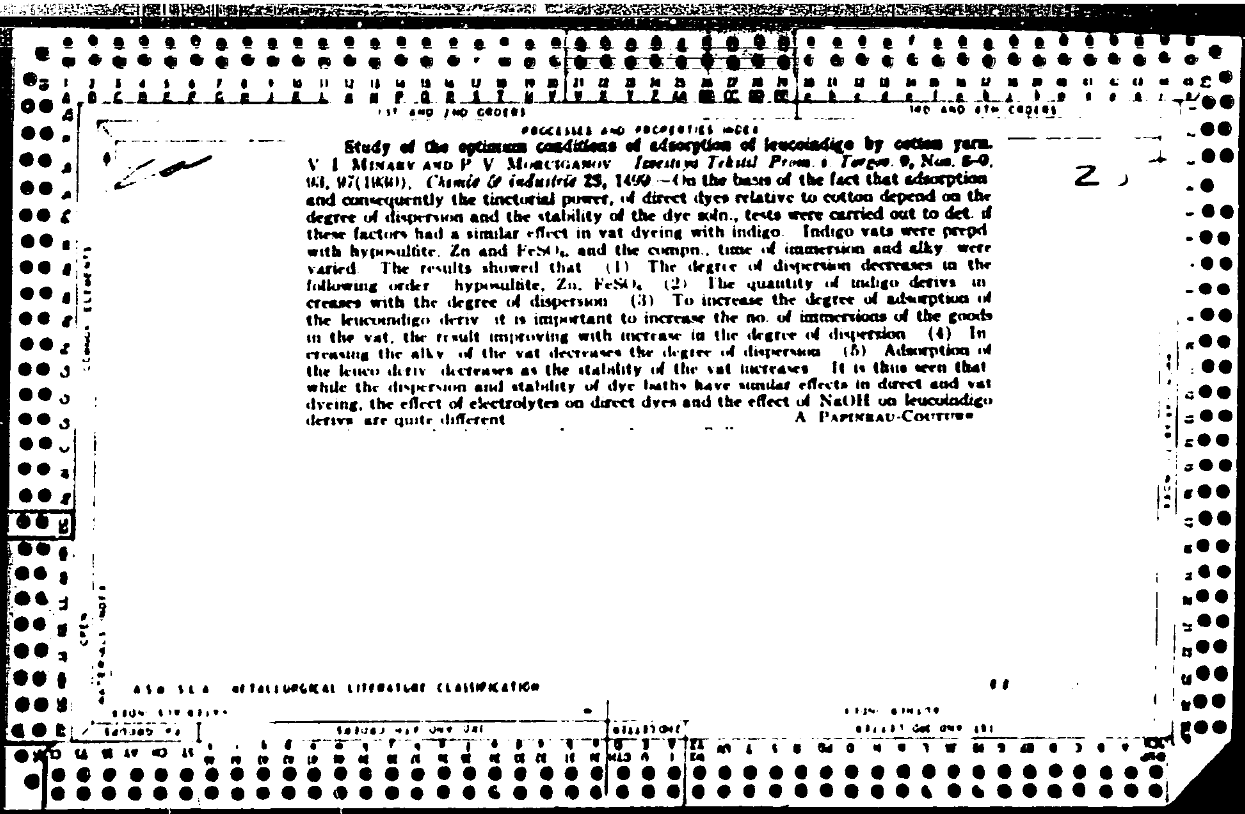
[illegible] polymerization. Vysokom. soed. [illegible] 8 [illegible]
([illegible])

1. Nauchno-issledovatel'skiy institut khimii [illegible] gosudarstvennom universitete imeni Lobachevskogo.

MORYGANOV, I.; MOZHAYEV, YU.

Against the offensive of the monopolies of the German Federated Republic. Sov.profsoiuzy 16 no.13:55-58 Jl '60. (MIRA 13:8)

(Germany, West--Politics and government)



1ST AND 2ND ORDERS

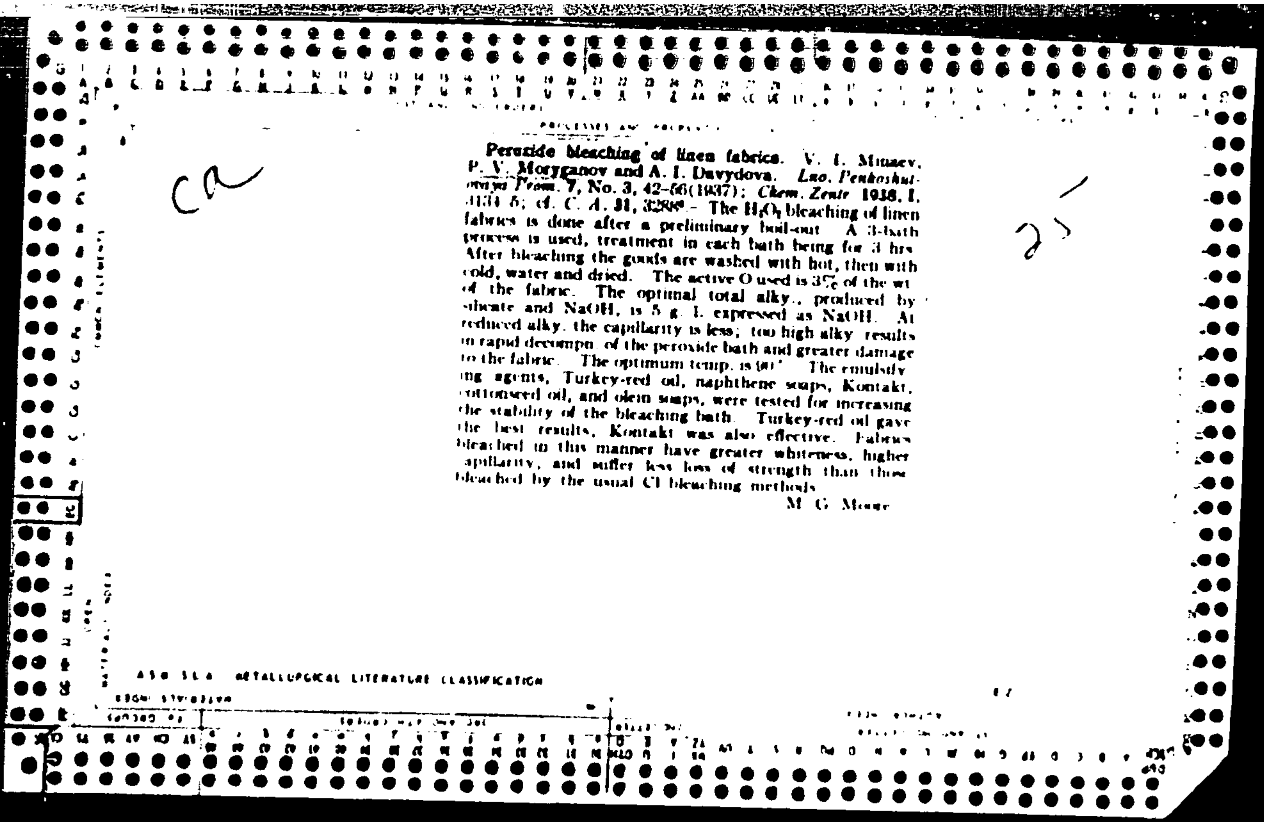
3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

Z

Study of the optimum conditions of adsorption of leucoindigo by cotton yarn. V I Minaev and P V Morgunov *Izvestiya Tekstil Prom. i Torgov.* 9, Nos. 8-9, 93, 97(1930). *Chimie & industrie* 25, 1490.—On the basis of the fact that adsorption and consequently the tinctorial power, of direct dyes relative to cotton depend on the degree of dispersion and the stability of the dye soln., tests were carried out to det. if these factors had a similar effect in vat dyeing with indigo. Indigo vats were prepd with hyposulfite, Zn and $FeSO_4$, and the compn., time of immersion and alky were varied. The results showed that (1) The degree of dispersion decreases in the following order hyposulfite, Zn, $FeSO_4$ (2) The quantity of indigo derivs increases with the degree of dispersion (3) To increase the degree of adsorption of the leucoindigo deriv it is important to increase the no. of immersions of the goods in the vat, the result improving with increase in the degree of dispersion (4) Increasing the alky of the vat decreases the degree of dispersion (5) Adsorption of the leuco deriv decreases as the stability of the vat increases It is thus seen that while the dispersion and stability of dye baths have similar effects in direct and vat dyeing, the effect of electrolytes on direct dyes and the effect of NaOH on leucoindigo derivs are quite different A Papineau-Couture

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES

CA

25

Peroxide bleaching of linen fabrics. V. I. Minaev, P. V. Moryganov and A. I. Davydova. *Lno. Penkoshut. Prom.* 7, No. 3, 42-66(1937); *Chem. Zentr* 1938, I, 4134 5; cf. *C. A.* 31, 3288^9. – The H_2O_2 bleaching of linen fabrics is done after a preliminary boil-out. A 3-bath process is used, treatment in each bath being for 3 hrs. After bleaching the goods are washed with hot, then with cold, water and dried. The active O used is 3% of the wt. of the fabric. The optimal total alky., produced by silicate and NaOH, is 5 g. l. expressed as NaOH. At reduced alky. the capillarity is less; too high alky. results in rapid decompn. of the peroxide bath and greater damage to the fabric. The optimum temp. is 60°. The emulsifying agents, Turkey-red oil, naphthene soaps, Kontakt, cottonseed oil, and olein soaps, were tested for increasing the stability of the bleaching bath. Turkey-red oil gave the best results, Kontakt was also effective. Fabrics bleached in this manner have greater whiteness, higher capillarity, and suffer less loss of strength than those bleached by the usual Cl bleaching methods.

M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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CA

25

Bleaching cotton goods by means of sodium hypochlorite
in presence of sodium bicarbonate. V. I. Minaev, P. V.
Morygauov and N. G. Kleming. *Legk. Prom.* 16, No. 6,
67-78(1937); *Chimie & industrie* 39, 747-8.—The addn.
of $NaHCO_3$ imparts a high activity to NaOCl solns. owing
to the liberation of HOCl, such as to permit bleaching of
the fabrics in 1 min. at 20° at a hypochlorite concn. equiv
to 1 g. available Cl per l. As the conditions are quite
mild, the short time required for bleaching does not allow
of any appreciable attack of the fiber, but at the same time
is sufficient for the complete destruction of coloring matter
and the partial destruction of other incrustants. On the
other hand, $NaHCO_3$ acts as a buffer, which ensures the
constancy of the pH of the bleaching solns. A. P.-C.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

CW

Colloid chemical basis of sulfite dyeing. P. V. Morygaaov. *Colloid J.* (U. S. S. R.) 4, 201-79(1938). It is suggested that the fixation of a dye by fabrics increases with rising dispersity and falling stability of the dye soln. The solns. were those used in industry and contained in addn. to the dye Na_2S, Na_2CO_3 and "neutralized contact." Sulfite Blue and Brown were employed. They were pptd. by NaCl or $CaCl_2$ without a definite threshold of coagulation, and the coagulating power of $CaCl_2$ was only slightly larger than that of NaCl. Increase of the ratio Na_2S: dye from 0.5 to 2 increased the stability considerably. When diffusing in gelatin Sulfite Brown gave rise to 3, and Sulfite Blue to 2 distinct layers so that the dyes were polydisperse. Sulfite Blue diffuses more rapidly than brown; both migrations are accelerated by Na_2S. The "soly." of Sulfite Black CF in Na_2S has a max. at the ratio Na_2S: dye 0.5, and the rate of its migration in agar-agar at the ratio 1.5. Its fixation by cotton fabrics increases rapidly between the ratios 0.2 and 0.6 and slowly at a further increase of the ratio; the first increase being due to rising "soly." and dispersity, and the second one to the lowering of stability. Addn. of 1 mol. NaOH for 1 mol. Na_2S raises the rate of migration in agar-agar at the ratios 0.5 and 1 and lowers it at the ratio 1.5. The migration is retarded by $NaHCO_3$. As, however, $NaHCO_3$ decreases the stability more strongly, the fixation of Sulfite Black is greater in presence of $NaHCO_3$.

J. J. Bikerman

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

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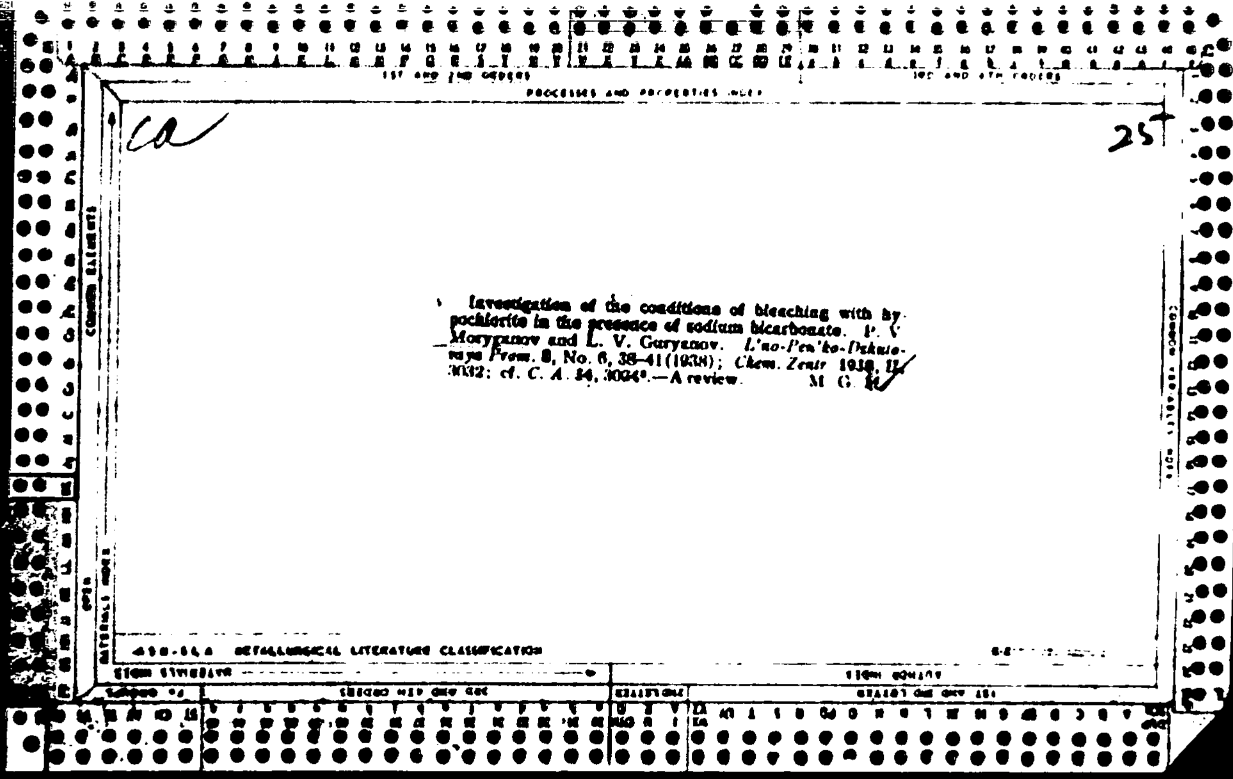
CA

23

Stable color with indigosols. P. V. Moryganov and S. A. Plaksin. *Byull. Ivanovo Nauch.-Issledovatel. Tech. Inst.* 1938, No. 6–7, 66–87; *Khim. Referat. Zhur.* 2, No. 5, 105-6(1939).—Methods for the dyeing with different dyes are given. To avoid the premature oxidation of indigosols during drying it is recommended to add NH_3 to counteract the acidity produced by the addn. of the NH_4 salts. Best results were obtained by addn. of $(NH_4)_2C_2O_4$. Addn. of alizarin and ricin soap gave good results. $K_4Fe(CN)_6$ and NH_4 vanadate were investigated as catalysts. A prolonged boiling caused up to 23.5% loss of strength of the fibers.

W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION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PROCESSES AND PROPERTIES INDEX
3RD AND 4TH ORDERS
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ca

25

Investigation of the conditions of bleaching with hypochlorite in the presence of sodium bicarbonate. P. V. Moryganov and L. V. Guryanov. *L'no-Pen'ko-Dzhutovaya Prom.* 8, No. 6, 38–41 (1938); *Chem. Zentr.* 1938, II, 3032; cf. *C. A.* 34, 3004^{9}.—A review. M. G. M.

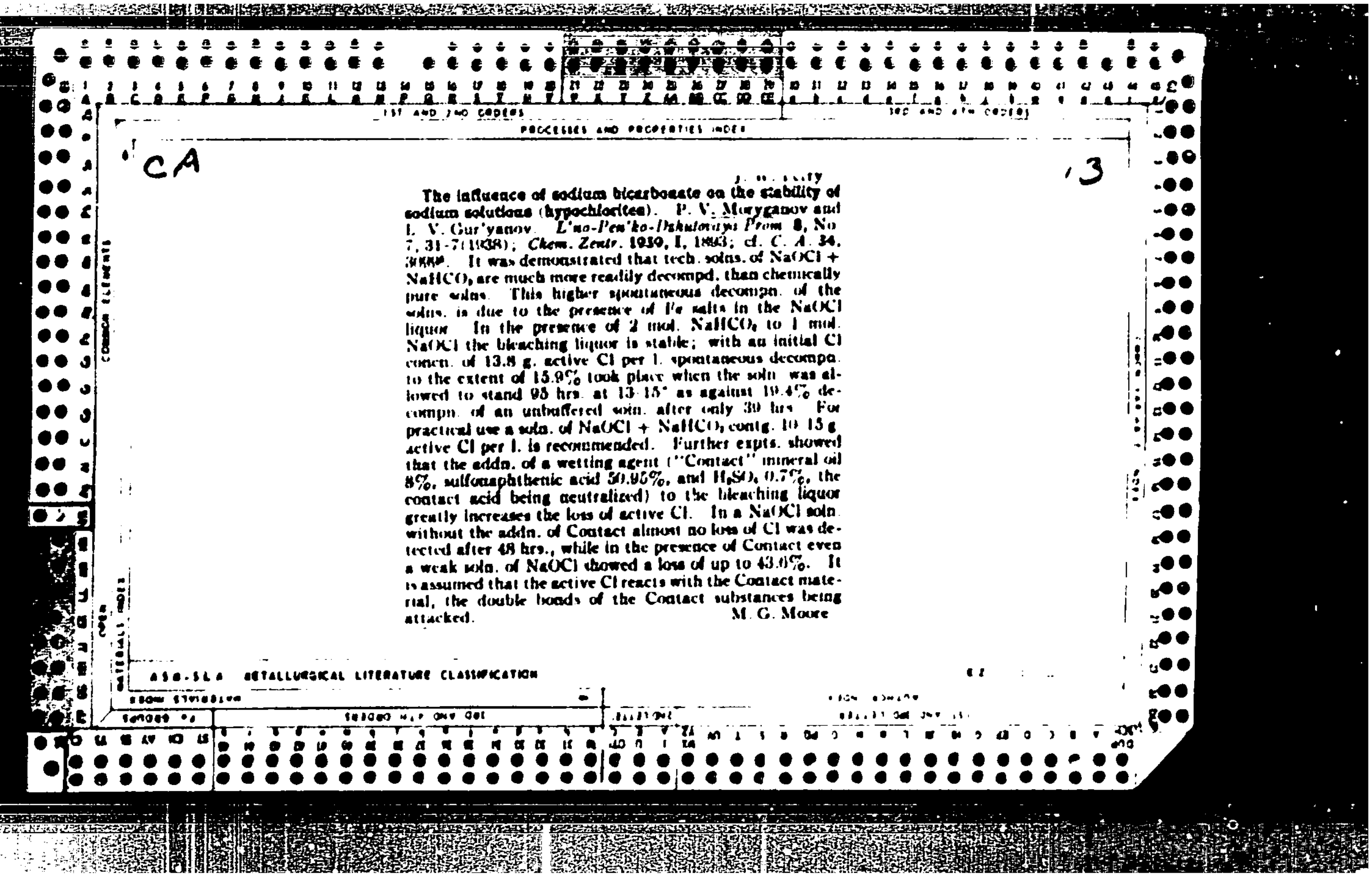
ca

Iodometric determination of hydroxycellulose. P. V. Moryganov and E. I. Vlasyuk. *J. Applied Chem.* (U.S.S.R.) 11, 711-18 (in French 718) (1938). The iodometric method was used to det. the degree of decompn. of cotton by bleaching. The material (4 g.) was refluxed with 100 cc. of 1% NaOH soln. for 1 hr., cooled, filtered and 32 cc. of the filtrate mixed with 10 cc. of 0.05 *N* I in 60 cc. of water. After 20 min., the soln. was acidified with 20 cc. of 2% HCl soln. and unchanged I was back-titrated with 0.05 *N* $Na_2S_2O_3$ in the usual manner. The results showed that hypochlorite continually oxidized the cellulose of cotton, although at a decreasing rate. Besides the detn. of aldehyde groups by the above method, the ext. obtained by boiling cotton with 1% NaOH soln. can be used for the detn. of COOH groups as follows: Titrate the ext. with 0.1 *N* HCl soln. in the presence of phenolphthalein; this accounts for all NaOH (x) and half the Na_2CO_3 ($y/2$): $x + y/2 = A$ (amt. of HCl used). Add methyl yellow and continue the titration; this accounts for the remaining Na_2CO_3 ($y/2$) and COOH (z): $y/2 + z = B$. Finally, to a fresh portion of ext. add some 10% NaOH soln. and titrate as before in the presence of phenolphthalein; this accounts for $x = C$. Solve these three equations with respect to z. The method is only approx. Ten references.

A. A. Podgorny

23

ASO-SLA METALLURGICAL LITERATURE CLASSIFICATION


1ST AND 2ND ORDERS
PROCESSES AND PROPERTIES INDEX
CA
3
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

The influence of sodium bicarbonate on the stability of sodium solutions (hypochlorites). P. V. Morygаnov and I. V. Gur'yanov. *L'no-Pen'ko-Dzhutovaya Prom.* 8, No. 7, 31-7(1938); *Chem. Zentr.* 1939, I, 1883; cf. *C. A.* 34, 3888. It was demonstrated that tech. solns. of NaOCl + $NaHCO_3$ are much more readily decompd. than chemically pure solns. This higher spontaneous decompn. of the solns. is due to the presence of Fe salts in the NaOCl liquor. In the presence of 2 mol. $NaHCO_3$ to 1 mol. NaOCl the bleaching liquor is stable; with an initial Cl concn. of 13.8 g. active Cl per l. spontaneous decompn. to the extent of 15.9% took place when the soln. was allowed to stand 95 hrs. at 13-15° as against 19.4% decompn. of an unbuffered soln. after only 30 hrs. For practical use a soln. of NaOCl + $NaHCO_3$ contg. 10-15 g. active Cl per l. is recommended. Further expts. showed that the addn. of a wetting agent ("Contact" mineral oil 8%, sulfonaphthenic acid 50.95%, and H_2SO_4 0.7%, the contact acid being neutralized) to the bleaching liquor greatly increases the loss of active Cl. In a NaOCl soln. without the addn. of Contact almost no loss of Cl was detected after 48 hrs., while in the presence of Contact even a weak soln. of NaOCl showed a loss of up to 43.0%. It is assumed that the active Cl reacts with the Contact material, the double bonds of the Contact substances being attacked.

M. G. Moore

PROCESSES AND PROPERTIES INDEX

Optimum conditions of fixing insoluble azo dyes with Naphthols AS on cotton. I. **"Air sensitivity" of the wet naphthol-treated fabric.** P. V. Morygunov and V. R. Rostovtsev. *Trans. Inst. Chem. Tech. Ivanovo* (U. S. S. R.) No. 2, 96–101(1939).—The air sensitivity of the Naphthols AS, AS-RL, AS-BS, and AS-G was tested by comparing the dye losses from cotton fabrics which were kept in a moist medium or exposed to air. The sensitivity was of the following order: AS < AS-RL < AS-BS < AS-G. Light did not have any effect upon the air sensitivity of the wet naphthol-treated fabrics. Pyridine and apparatin caused no noticeable increase in the air sensitivity while formalin caused a considerable increase. It is suggested that the following process regulates the changes in the wet naphthol-treated fabrics: CO_2 from the air fixes the free alkali and hydrolyzes the naphtholate, the free naphthol undergoing tautomeric transformation into an inactive keto-form which cannot participate in the azo combination. II. **Investigation of the substantive properties of Naphthols AS.** *Ibid.* 102–14(1939).

A study was made of the relationships between the substantive properties of the Naphthols AS, AS-BS, and AS-RL and the alky., temp., and addns. of alc., pyridine, HCHO and protective colloids. It was found that variations of alkali from 3–4 to 12–14 mols per mol of naphthol had very little effect on the substantive properties of the naphtholates. Within these ranges the Naphthols AS and AS-BS were characterized by a small

ASB-SLA METALLURGICAL LITERATURE CL

PROCESSES AND PROPERTIES INDEX

Suspension method of dyeing semi-flax linen fabrics with vat dyes. P. V. Moryganov and V. D. Starostina. *Trans. Ivan. Chem. Tech. Inst.* (U. S. S. R.) No. 2, 125-31(1939). Results are reported on lab. and plant expts. of suspension dyeing with indanthrene and indigoid dyes. The suspensions were made from mechanically made pastes. Suspensions contg. glycerol and dye (1:1) gave satisfactory results. Alizarin oil gave stable suspensions but the adsorption of the dye was slower. The alizarin oil gave good results when used in concn. of 2.5 g./l. Kontakt gave less stable suspensions than glycerol. The suspension method gave level and full colors using the same amts. of dyes and hyposulfite as in vat dyeing. The indanthrenes required a higher alky. than the indigoids. The suspension method requires a smooth fabric with good capillarity. B. Z. Kamich

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

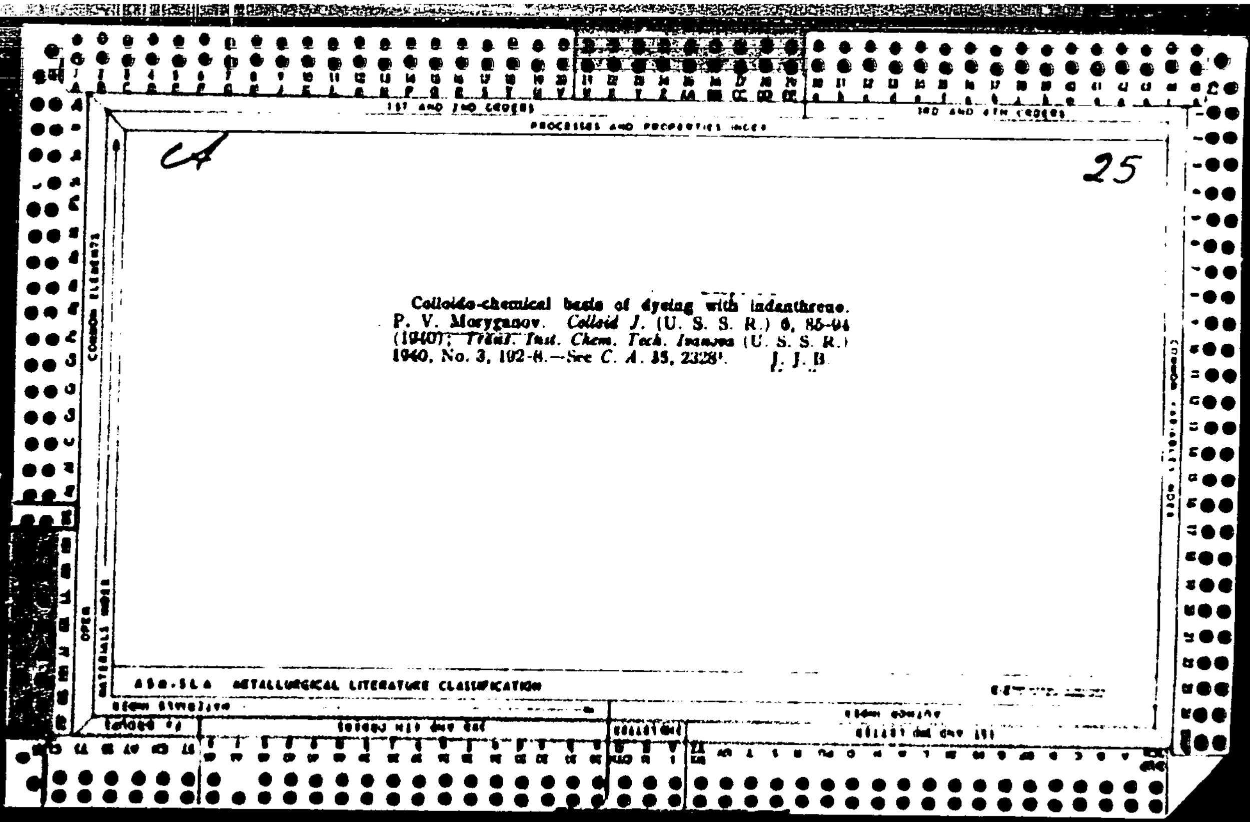
c8

25

The dyeing properties of naphthols of the AS series. P. V. Morygunov and V. E. Rostovtsev. *Colloid J.* (U. S. S. R.) 5, 201-[illegible](1939).—The sorption of the naphthols by cotton fabrics is intensified by NaCl or by alizarin oil and reduced by EtOH, pyridine, gelatin, etc. A change of the concn. of NaOH in the soln. from 3 *N* to 14 *N* does not affect the sorption. The sorption decreases with increasing temp. The coagulation value and the turbidity of naphthol solns. give no indication as to their dyeing power.

J. J. Bikerman

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

CA

25

Colloido-chemical basis of dyeing with indanthrene. P. V. Moryganov. *Colloid J.* (U. S. S. R.) 6, 85-94 (1940); *Trudy Inst. Chem. Tech. Ivanova* (U. S. S. R.) 1940, No. 3, 102-8.—See *C. A.* 35, 2328¹. J. J. B.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

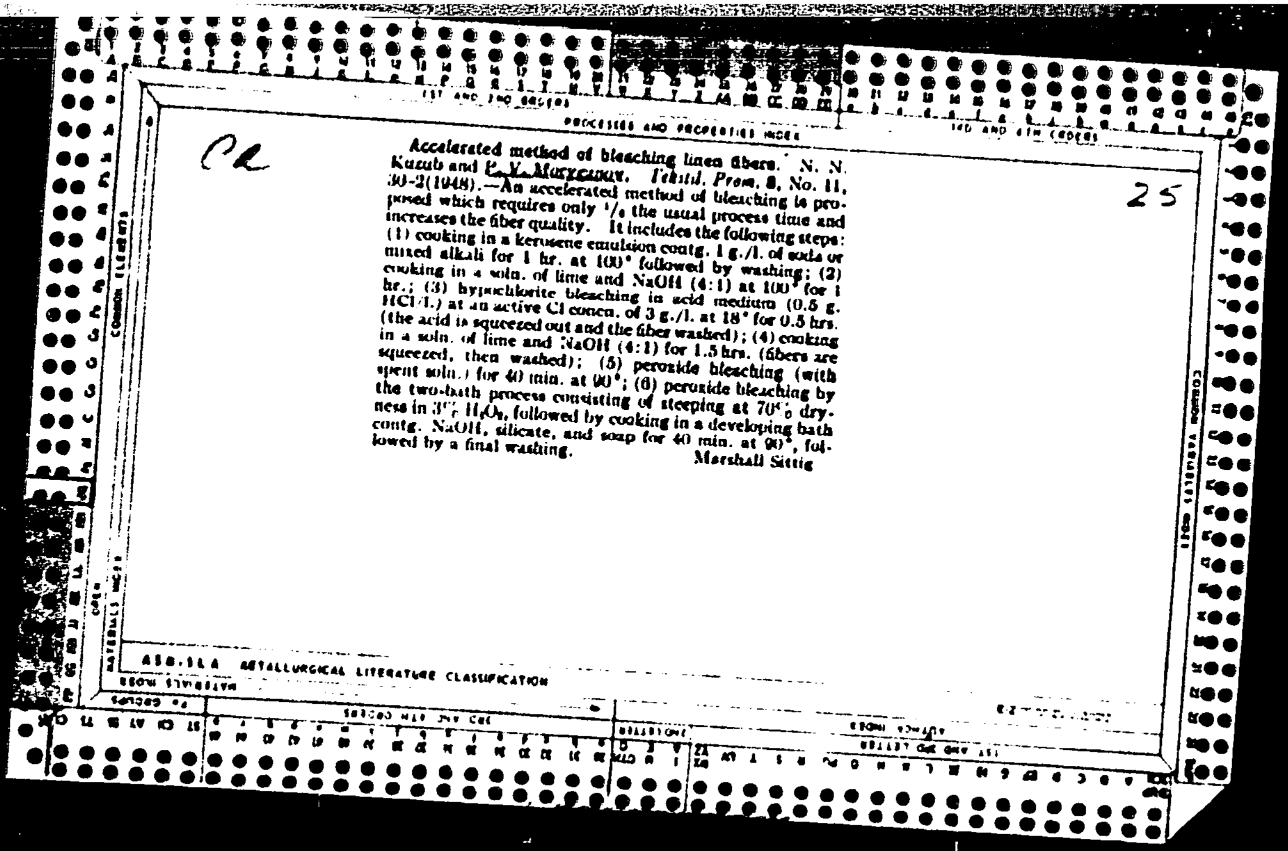
Ca

34

Colloid-chemical basis of dyeing with indanthrenes. P. V. Moryganov. *Khlopchato-Bumazhnaya Prom.* 1940, No. 9-10, 23-5.—The first stage of vat dyeing—the absorption of the leuco compd. by the fibers—is subject to the same principles as in substantive dyeing. The degree of dispersion of the leuco compd. depends on chem. characteristics of dye, concn. of dye, concn. of electrolyte, alky. of vat and temp. Substantive properties of leuco compds. of indanthrenes are due first of all to chem. characteristics of the dye. Formation of equil. during absorption by the fibers is speeded up by greater dispersion.

B. Z. Kamich

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

Cl

25

Accelerated method of bleaching linen fibers. N. N. Kuzub and P. V. Morygenov. *Tekstil. Prom.* **8**, No. 11, 30-2(1948).—An accelerated method of bleaching is proposed which requires only 1/6 the usual process time and increases the fiber quality. It includes the following steps: (1) cooking in a kerosene emulsion contg. 1 g./l. of soda or mixed alkali for 1 hr. at 100° followed by washing; (2) cooking in a soln. of lime and NaOH (4:1) at 100° for 1 hr.; (3) hypochlorite bleaching in acid medium (0.5 g. HCl/l.) at an active Cl concn. of 3 g./l. at 18° for 0.5 hrs. (the acid is squeezed out and the fiber washed); (4) cooking in a soln. of lime and NaOH (4:1) for 1.5 hrs. (fibers are squeezed, then washed); (5) peroxide bleaching (with spent soln.) for 40 min. at 90°; (6) peroxide bleaching by the two-bath process consisting of steeping at 70% dryness in 3% H_2O_2, followed by cooking in a developing bath contg. NaOH, silicate, and soap for 40 min. at 90°, followed by a final washing.

Marshall Sittig

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MORYGANOV, P.V.

CH

Determination of vat dyes on wool fiber. N. G. Klemid, P. V. Moryganov, and A. A. Solov'ev. *J. Appl. Chem. U.S.S.R.* 27, 749-51(1954)(Engl. translation).—See *C.A.* 48, 18223c.

B. M. R.

②

Maryganov P. V.

Determination of vat dyes on wool fiber. N. G. Klemin, P. V. Moryganov, and A. A. Solov'ev (Chem. Technol. Inst., Ivanovo). *Zhur. Priklad. Khim.* 27, 797-800(1954). —The wool sample is dissolved in concd. H_2SO_4, best for 5 min. at 110°, and the cooled mixt. is poured into 70 ml. 0.1% gelatin. After diln. to known vol. a similar soln. is prepd. from the pure dye of known concn. and the detn. is made by the usual colorimetric process. Reproducibility within 5% is reported. G. M. Kosolapoff

Moryganov, P. V.

New method of purification of direct dyes. B. N. Mel'nikov and P. V. Moryganov. *J. Appl. Chem. U.S.S.R.* 27, 855-9(1954)(Engl. translation).—See *C.A.* 49, 619e. D. M. B.

New method of purification of direct dyes. B. N. Mel'nikov and P. V. Morygenov (Chem. Technol. Inst., Ivanovo). *Zhur. Priklad. Khim.* 27, 915–20(1954).—An improved and rapid method of purification of direct dyes is described; this involves the use of Aniline Black (I) that had been freshly prepd. and air-dried. The method depends on the use of I as an anionite-exchange agent, which can be regarded as a form of RNH_2, or a basic polymer. All direct and acid dyes are capable of reacting with such a substance through salt formation and the salts are readily regenerated by addn. of base. A paste of I is prepd. by mixing 3 solns.: 25 g. $PhNH_2$ salt in 80 g. H_2O at 75°; 5 g. $CuSO_4$, 9 g. $NaClO_3$, and 60 ml. H_2O at 75–80°; and 4 g. NH_4Cl in 50 ml. H_2O at 75°; the mixed soln. is heated to boiling, the resulting ppt. of I is sepd. and washed with cold H_2O. The resulting paste is added to a boiling soln. of 5–7 g. crude dye in 500 ml. H_2O, and boiling is continued until dye absorption becomes complete; the ppt. is filtered and washed with hot H_2O (the filtrate is tested for halide ion) until free of halide, when it is treated with base and the dye is returned to its original state and I is left in soln. In this way Direct Blue and Direct Violet dyes were readily converted from 39.9–46.2% purity to 90.47–94.32% purity. The sorption capacity of I can be detd. readily by conventional colorimetric methods. I that had been subjected to hydrolysis and oxidation reactions has much lower sorption capacity than freshly prepd. I; this is explained by destruction of the reactive amino groups. G. M. Kosolapoff

Lab, Chair Chem. Technol.

SADOV, Fedor Ivanovich; SOKOLOVA, Nadezhda Mikhaylovna; SHIKANOVA, Iraida Aleksandrovna; KORCHAGIN, Mikhail Vladimirovich; KALININA, Kapitolina Georgiyevich; KORYGANOV, P.V., retsenzent; GUSEVA, Ye.M., redaktor; MEDVEDYEV, L.Ye., tekhnicheskiy redaktor.

[Laboratory manual for the course "Industrial chemistry of fibrous materials."]Laboratornyĭ praktikum po kursu "Khimicheskaia tekhnologiia voloknistykh materialov." Moskva, Gos. nauchno-tekhn.izd-vo Ministerstva promyshl.tovarov shirokogo potrebleniia SSSR, 1955. 426 p. (MLRA 8:12)
(Textile chemistry)

MORYGANOV - P.V.

3

M.A. YOUTZ

Sccp:c

Mathy **Equilibrium dyeing of cotton fibres with direct dyes.** P. V. Moryganov and B. N. Melnikov (*Tekstil. Prom.*, 1955, 15, No. 8, ~~63-66~~). 2 The study has shown the complete reversibility of the interaction between cellulose and direct dyes, the same equilibrium constants being obtained in the direct and reverse reactions. It is shown that, under the usual dyeing conditions, the theoretically calculated quantity of dye on the fibre, according to its thermodynamical characteristics, corresponds to the amount found experimentally. The affinity of the dye for cellulose fibres is a purely energetic characteristic and depends on the structure of the dye mol. and not on the concn. of dye and electrolyte in the dye bath.

J. Text. Inst. (R.B.C.).

Ivanovo Chem Tech. Inst,

Moryganov, P.V.

USSR

Solubility of direct and acid dyes. B. N. Mel'nikov and P. V. Moryganov (Inst. Chem. Technol., Ivanovo). *Kolloid. Zhur.* 17, 98-106 (1955).—The samples used contained, after purification, 82-88% dye, 8-15% H_2O, and 1.5-0.1% impurities. The soly. of Chrysophenine (I) and Benzopurpurin 10B (II) in H_2O depended on the size of the sample; thus, it was at 25° 4.8 and 9.9 g./l. when 0.3 and 1.2 g., resp., of I were added to 60 cc. H_2O, and 3.9 and 4.6 g./l. when 0.1 and 1.5 g., resp., of II were added to 25 cc. H_2O. The soly. of all samples increased with temp.; e.g., at 25 and 70°, resp., it was 9.7 (for 1 g. I in 50 cc.) and 30.8 (for 1.8 g. I), 5 and 85 for Methyl Orange, 46 and 117 for Direct Blue, 25 and 184 for Acid Orange, and 46 and 200 for Acid Brilliant Orange G. The soly. of II at 45° (no higher temp. was used) and of the 4 last-named dyes at all temps. was independent of the amt. The soly. of I in 10% pyridine +90% H_2O and 20% pyridine +80% H_2O also was independent of the amt. (at 25°, it was 74 and 104, resp.). Thus, only I in H_2O and II in H_2O below 45° formed colloidal particles. The temp. coeff. of soly. was greater above 40° than below 40°; probably, the dyes were aggregated at the lower temps. Addn. of salts having no common ion raised, and addn. of salts with a common ion lowered, the soly. of some dyes.

J. J. Bikerman

C H ①

MORYGANOV P V

USSR /Chemical Technology. Chemical Products and Their Application I-19

Dyeing and chemical treatment of textiles

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 32187

Author : Mel'nikov B.N., Moryganov P.V.

Inst : Ivanovo Chemico-Technological Institute

Title : Solubility of Direct and Acid Dyestuffs

Orig Pub: Tr. Ivanovsk. khim.-tekhnol. in-ta, 1956, No 5, 159-168

Abstract: See RZhKhim, 1956, 20470

Card 1/1

MORYGANOV, P.

Scientifi and technical conference on the synthesis and use of organic dyestuffs. Khim.prom.no.6:382-383 S '56. (MLRA 10:2)

1. Zaveduyushchiy kafedroy khimicheskoy tekhnologii voloknistykh materialov Ivanovskogo khimiko-tekhnologicheskogo instituta.
(Dyes and dyeing)

MORYGANOV, P.V.

Scientific and technical conference on problems relating to the synthesis and use of organic dyestuffs. Tekst.prom. 16 no.9:33-35 S '56. (MLRA 9:12)

1. Zaveduyushchiy kafedroy khimicheskoy tekhnologii voloknistykh materialov Ivanovskogo khimiko-tekhnologicheskogo instituta.
(Dyes and dyeing)

MORYGANOV, P.V.; MEL'NIKOV, B.N.

Continuous method for dyeing fiber. Tekst.prom.16 no.12:59-61 D'56.
(MLRA 10:1)

(United States--Dyes and dyeing)

MORYGANOV, P.V.

Thermodynamic study of the dyeing process of cotton
fibers. P. V. Moryganov and B. N. Mel'nikov (Chem.-
Technol. Inst., Ivanovo). Kolloid. Zhur. 18, 49-60
(1956).—Purified dyes (contg. 80-88% dye and 10-15%
H_2O) were equilibrated with a bleached cotton fabric in the
presence of NaCl. The equil. was reached, e.g., in 1750–
2660 hrs. at 25°, 5–14 hrs. at 70°, and 0.75–2 hrs. at 100°;
usually, chrysophenine (I) was taken up most, and Direct
Diazoblack O (II) least, rapidly. The attainment of the
equil. was checked also by desorption expts. which at 60°
lasted 70–90 hrs. and, at 80°, 50–70 hrs. The equil. concn.
a (in g. for 1 kg. dry fabric) at 60° for I was, e.g., 5 and 13
when its concn. *c* in the 0.5% NaCl soln. was 0.1 and 0.3 g./
l., resp.; from 2% NaCl, *a* was 20 when *c* was 0.1; and at
80° *a* from 1.5% NaCl soln. was about as great as that from
0.5% NaCl soln. at 60°; many other values are given in a
graph. The uptake of Direct Light Blue K (III) was
smaller; e.g., at 60° from 0.5% NaCl soln. *a* was 8 at $c =$
0.16. The enthalpy ΔH of dyeing was calcd. from these
expts. by the formula $\Delta H = R \ln (c_1/c_2)T_1T_2/(T_1 - T_2)$; *R* is

CH

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([illegible])

the gas const., c_1 is that concn. of the dye in the soln. which
gives the same a at temp. T_1 as c_2 gives at T_2. The ΔH was
14,000-10,000 cal./mole for both I and III. From similar
dyeing expts. at lower concns. of NaCl (0.02-0.04N) the
Gibbs free energy ΔZ of the process was calcd. by the equa-
tion $-\Delta Z/RT = \ln a + z \ln [Na^+]_f - \ln c - z \ln [Na^+]_s -$
$(z + 1) \ln v$; a and c are expressed in g. ions/l.; $[Na^+]_f$ and
$[Na^+]_s$ are concns. of Na^+ in the fiber and the soln., resp., z
is the valency of the dye anion, and v is the available vol. of
the solid phase, assumed to be 0.3 ml./g. The ΔZ was, e.g.,
4300 and 3300 cal./mole for I at 60° and 100°, resp.; it was
about 15%, 30%, and 50% greater for III, Direct Violet,
and II, resp. The ΔZ was not markedly affected by either
the NaCl concn. or c; it was smaller the greater the no. of
sulfo groups and the smaller the no. of OH and NH_2 groups
in the dye mol.

J. J. Bikerman

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MEL'NIKOV, B.N.; MORYGANOV, P.V.

Diffusion of direct dyes into cellulose fibers [with English summary in insert] Koll.zhur. 18 no.5:566-573 S-O '56. (MLRA 9:11)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, Laboratoriya kafedry khimicheskoy tekhnologii voloknistykh materialov.
(Dyes and dyeing--Cellulose)

MERYAKHNOV, P V

Effect of hydrophilic substances on the diffusion of direct dyes in cellulose fibers. B. N. Mel'nikov and P. V. Mery-ganov (Chem.-Technol. Inst., Ivanovo). *Kolloid. Zhur.* 18, 711-16(1956); cf. *C.A.* 51, 5125c.—Dyes diffuse in a fiber slowly because they have an affinity for the fiber; if this affinity is reduced by a 3rd substance, the coeff. of diffusion *D* should be greater. That was confirmed by adding pyridine (50 g./l.) to a soln. of Color Index No. 595 and No. 401 in 5% NaCl soln. and immersing Cu-NH$_3$ rayon in the soln. The *D* (10^{-8} sq. cm./min.) was, e.g., at 60° and *t* = 1 hr. for the 2 dyes 0.74 and 0.60 without, and 1.78 and 1.82 with pyridine; and at 100° and *t* = 15, *D* for No. 595 was 8.8 and 21.2 without and with pyridine, resp. The energy of activation of diffusion was lowered by pyridine.

J. J. Bikerman

2/

MORYGANOV, P.V.

2

Kinetics of dyeing processes. P. V. Moryganov and B. N. Mel'nikov (*Usp. Khim.*, 1956, 25, 1149—1164).—Literature relating to dyeing processes and technology is reviewed and thermodynamics are discussed in relation to type of fibre, chemical structure of dye, temp. and degree of coloration obtainable. (24 references.) A. B.

MORYGANOV, P. V. Doc Tech Sci -- (diss) "Thermodynamic Studies of the Processes of the Dyeing of Cotton Fiber[illegible]." Ivanovo, 1957. 23 pp 21 cm. [illegible] (Min of Higher Education USSR, Mos Textile Inst), 130 [illegible] copies (KL, 26-57, 107)

MORYGANOV, P.V.; MEL'NIKOV, B.N.

Interaction of azotols with cotton fiber. Tekst.prom. 17 no.2:
41-43 F '57. (MLRA 10:2)
(Dyes and dyeing--Cotton) (Azotol)

MORYGANOV, P.V.

KLEMIN, N.O.; MORYGANOV, P.V.

Vat dyeing of wool. Tekst. prom. 17 no.4:35-39 Ap '57. (MLRA 10:4)

1. Iz rabot Ivanovskogo khimiko-tekhnologicheskogo instituta.
(Dyes and dyeing--Wool)

✓ **The relationship between the affinity of direct dyes and their structure.** P. V. Moryganov and B. N. Mel'nikov (Inst. Chem. [illegible], Ivanovo). *Kolloid. Zhur.* 19, 100-8(1957); cf. C.A. 50, 9822h.—The affinity μ = [illegible] (ln C_f' − ln C_s [illegible]) [illegible] and [illegible] are the concns. of dye in cellulose fiber and soln. resp., [illegible] and [illegible] are the corresponding [illegible] is the valency of the dye anion, and [illegible] is the [illegible] of the cellulose per kg. [illegible] The μ (at 80 and [illegible]) increased from [illegible] disulfo-amino [illegible] to Na salts of C.I. 365, 8,8'-dibenzoyl deriv. of I and bis-[4-(3-sulfo-7-amino-1-hydroxy-2-naphthylazo)phenyl]amine (II) (all 3 approx. equal), and to Na salts of C.I. 401 and 7,7'-dibenzoyl deriv. of II. When NH interrupted the chain of conjugated double bonds, μ decreased but it was restored by Bz groups. The increase Δμ of μ by Bz was accounted for by Meggy's equation (C.A. 45, 357b) Δμ = 0.021*S*, *S* = area of a Bz radical. J. J. Bikerman

MORYGANOV, P.V.

MEL'NIKOV, B.N.; MORYGANOV, P.V.

The state of direct dyes in solution and their diffusion in a cellophane film [with summary in English]. Koll. zhur. 19 no.6:689-695 N-D '57.
(MIRA 11:1)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, Kafedra khimicheskoy tekhnologii voloknistykh materialov.
(Dyes and dyeing--Chemistry) (Diffusion)

AUTHORS: Krasovitskiy, B. M., Moryganov, P. V., Titarenko, N. I., Mel'nikov, B. N. 20-3-21/46

TITLE: A Comparative Study of the Affinity of Direct Azodyes - of the Diphenyl and p - Terphenyl Derivatives - to Cellulose Cotton Fibre (Sravnitel'noye issledovaniye srodstva pryamykh azokrasiteley - proizvodnykh difenila i para-terfenila - k tsellyuloznomu khlopkovomu voloknu).

PERIODICAL: Doklady AN SSSR, 1957, Vol. 116, Nr 3, pp. 425-428 (USSR)

ABSTRACT: The question of the relation between the structure of the azo dyes and their affinity to cellulose fibre, attracts since long the attention of many researchers. To enable a dye to express its substantive properties, the presence of a long chain of conjugated double bonds in its molecules is required. Then the molecules become unsaturated and can easily be fixed on the cellulose fibre. An essential condition of the dye is that the substantive properties are correlated to a large extent with the planear structure of their molecules, or respectively with the assumption of such a structure in the case of an interaction with the cellulose fibre. An essential condition of the properties

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A Comparative Study of the Affinity of Direct Azodyes - of the Diphenyl and p - Terphenyl Derivatives - to Cellulose Cotton Fibre.

20-3-21/46

is, after all, the capacity of forming at least two hydrogen bonds between the molecules of the dye and the hydroxil groups of the cellulose. In spite of antithetical assertions, Robinson has proved that distances between the groups of molecules of dyes able to form hydrogen bonds, must not be approximated to the identity period of the cellulose (= 10.3 Å). Hydrogen bonds may occur at almost every place of the cellulose chain. After quoting further references the authors state that the investigation of the p-terphenyl derivatives allows to trace a successive agglomeration of benzene-rings. In this way the influence of the chain prolongation of the conjugated double bonds on the affinity of dyes to the cellulose fibre can be traced too. Further it can be stated in this context how far the mutual position of the groups able to form hydrogen bonds with cellulose, and the distance between them is of importance. Since this method was available to the authors, they compared some benzidine dyes with corresponding p-terphenyl derivatives. The azo-component to which very little attention is paid,

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20-3-21/46

A Comparative Study of the Affinity of Direct Azodyes - of the Diphenyl and p - Terphenyl Derivatives - to Cellulose Cotton Fibre.

together with its influence on the activity of the dyes, should be investigated simultaneously. Properties of benzidine dyes with 8 various azo components and of p - terphenyl derivatives with 3 azo-components were investigated. The data in table 1 show that the introduction of an additional benzene-ring in the molecule of the dye increases in all cases the affinity of the dyes to cotton cellulose fibre. In the case of dyes with the azo components Chicago SS and E -acids the affinity grows more at 80° than at 100°. This difference can be well explained by a greater tendency to aggregation in the case of decline of temperature with these dyes. The affinity is thus correlated also with the great entropy changes at the transition of an individual dye molecule into aggregates since the fibre is able to absorb also the later ones. In the coloring process this phenomenon is presented by the fact that the fibre is able to absorb a larger quantity of dyes than provided by the nature of the forces acting between the dye and the fibre. Thus the prolongation of the

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20-3-21/46

A Comparative Study of the Affinity of Direct Azodyes - of the Diphenyl and p - Terphenyl Derivatives - to Cellulose Cotton Fibre.

chain of the conjugated double bonds lead to an enlargement of the hydrophobic surface and to an intensification of polarization of the molecules of the dyes. By this, the affinity to the cellulose fibre increases regardless of the fact that the distance between the groups forming hydrogen compositions with cellulose, does not agree with the identity period of the cellulose. Concluding, further comparisons between the benzidine dyes with various azo components are quoted and conjectures about differences between them enounced. There are 1 table, and 21 references 10 of which are Slavic.

ASSOCIATION: Khar'kov State University, imeni A. M. Gor'kogo. Ivanovo Chemical Technological Institute (Khar'kovskiy gosudarstvennyy universitet im. A. M. Gor'kogo.Ivanovskiy khimiko-tekhnologicheskiy institut).

PRESENTED: May 15, 1957, by B. A. Kazanskiy, Academician

SUBMITTED: May 14, 1957.

AVAILABLE: Library of Congress

Card 4/4

Морыганов П.В.

KLEMIN, N.G., kand. tekhn. nauk; MORYGANOV, P.V., kand. khim. nauk, dots.

Studying the processes of wool and caprone vat dyeing. Izv. vys. ucheb. zav.; tekh. tekst. prom. no.1:142-152 '58. (MIRA 11:5)

1. Ivanovskiy khimiko-tekhnologicheskiy institut.
(Dyes and dyeing--Wool) (Dyes and dyeing--Nylon)

AUTHORS: Mel'nikov, B. N., Moryganov, P.V. 153-58-1-23/29

TITLE: Investigation of the Diffusion of Direct Dyes by a Cellophane-Film (Izucheniye diffuzii pryamykh krasiteley cherez tsellofanovuyu plenku)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy Khimiya i khimicheskaya tekhnologiya, 1958, Nr 1, pp. 157-163 (USSR)

ABSTRACT: The authors proved in previous reports (References 1 to 3) that the introduction into the dye vat of substances which increase the dispersiveness of the dyes in the solution and decrease the affinity of the former to the cellulose fibers, lead to an acceleration of the diffusion of the dyes in the fiber or in the film and to a reduction of the activation-energy of diffusion. The following problems were not investigated: a) The influence of the aforesaid substances on a possible swelling of the fiber or of the film, and on its dyeing capacity (nakrashivayemost'); b) The dependence of the degree of dispersiveness of direct dyes in the solution

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on the concentration of the dispersing agents. The present work is devoted to the clarification of these problems. Coefficients of diffusion of direct dyes in the cellophane film and in the solution were measured and moreover, the swelling and the dyeing capacity were investigated under the same conditions. The method by Nortop and Anson was applied for the determination of the coefficient of dispersion (Northop & Anson, Reference 4); the calculation of the coefficients of diffusion was carried out according to the equation by Kholms and Stending (Holmes & Standing, Reference 5). The method of determination of the same coefficients both in the film and in the solution was described in previous works by the authors (References 1,2). For the purpose of comparison of the coefficients of diffusion of the direct dyes in the cellophane film and of the practical velocity of dyeing of the cellulose fibers with these dyes, tests with the dyeing capacity of the films in presence of the dispersing addition in the dye vat were carried out. The conditions were far distanced from the equilibrium. The test lasted 1o, Investigation of the Diffusion of Direct Dyes by a Cellophane-Film

153-58-1-23/29

3o and 6o minutes. 3 direct dyes were tested: direct light blue K (pryamoy-goluboy K), direct diazo black S and direct pure light blue (chisto-goluboy). Triethanolamine was used as dispersing agent. The concentration of the dyes amounted to 0,2 g/liter, that of triethanolamine to 0; 5o; 1oo and 15o g/liter. Salt concentrations for the two light blue amounted to 7o g/liter and to 5o g/liter for the black one. The results are given in the tables 1 to 4.

Conclusions: 1) It was proved that in the presence of triethanolamine the coefficients of diffusion of the direct dyes increase 5 to 8 times. The values of activation energy decrease by half, compared with the same values without triethanolamine. 2) Triethanolamine changes the degree of dispersiveness of the direct dyes in the solution: its concentration up to 5o g/liter increases it, a further increase of its concentration reduces this degree. The coefficients of diffusion of some dyes (direct light blue K and diazo black S)

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continue to increase, however, which is apparently due to a reduction of the affinity to the fiber. 3) Triethanolamine does not effect any noticeable swelling of the cellophane-films. Yet the formation of adsorption-layers of triethanolamine-molecules on the surface of the films is possible. This accelerates the penetration of the dyes into the film. 4) The dyeing-capacity (nakrashivayemost') of the cellophane films increases according to the increase of the coefficients of diffusion of the dyes in the film. This holds for pure light blue within the whole range of temperature investigated and for the two other dyes only at 45°.
There are 1 figure, 5 tables, and 9 references, 5 of which are Soviet.

ASSOCIATION: Ivanovskiy khimiko-tekhnologicheskiy institut. Kafedra khimicheskoy tekhnologii voloknistykh materialov (Ivanovo Chemical Technological Institute, Chair for the Chemical Technology of Fiber-Materials)

SUBMITTED: September 24, 1957

KORYGANOV, P.V.; MEL'NIKOV, B.N.

Dyes reacting chemically with cellulose materials. Izv.vys.ucheb.zav.; tekh.tekst.prom. no.2:181-192 '58. (MIRA 11:5)

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